CHARLES WILLIAM BAILLIE.

We regret to have to announce the sudden death, at Broadstairs, on June 24, at the age of fifty-five years, of Naval Lieutenant Charles William Baillie, Marine Superintendent of the Meteorological Office, a post which he had held for eleven years.

Mr. Baillie was perhaps best known by his sounding machine, which he invented while on the North American Station about 1871, and which is still in use. It is a modification of the apparatus known as the "Hydra" machine. It was used in the *Challenger* expedition, and is described in Sir W. Thomson's book, "The Voyage of the *Challenger*." Lieut. Baillie was much employed in surveying, and while in the *Sylvia*, under Captain (now Vice-Admiral) St. John, on the China Station, he was selected by the Admiralty to be Director of Nautical Studies at the Imperial Naval College at Tokio, Japan. The results of his teaching are to be seen in the condition of the Japanese Navy at the present day.

After several years of duty in this important post he returned to England on half-pay. In October 1879 he joined the Meteorological Office, so that he had nearly completed twenty years of service in that institution.

The principal works which he has carried out there have been the charts of sea surface temperature, of barometrical pressure, and of currents for all oceans.

The discussion of the meteorology of the South Indian Ocean, from the Cape of Good Hope to New Zealand, which is shortly about to appear, has been carried out under Lieut. Baillie's superintendence, while he had laid down the lines of inquiry to be pursued in the work now in hand at the office—the "Meteorology of the South Atlantic and of the Coasts of South America." Lieut. Baillie was a Fellow of the Royal Geographical and the Royal Astronomical Societies. He married Miss Conyers, of Bermuda, and leaves a numerous family.

NOTES.

Prof. W. C. Brögger, of the University of Christiania, has accepted an invitation to deliver the second course of the George Huntington Williams memorial lectures at the Johns Hopkins University, in April 1900. He has selected as his subject "Modern deductions regarding the origin of igneous rocks."

Dr. G. Agamennone has been selected to succeed the late Prof. M. S. de Rossi as director of the important Geodynamic Observatory at Rocca di Papa, near Rome. Dr. Agamennone, who is well known by his numerous seismological papers, has for several years been assistant at the Central Office of Meteorology and Geodynamics at Rome; and, during the years 1895–96, was in charge of the seismic department of the Meteorological Observatory at Constantinople.

News has been received of the death of Mr. John Whitehead while on a scientific mission in the Island of Hainan. Mr. Whitehead left England in the autumn of last year for the purpose of exploring the less known islands of the Philippine group and obtaining a collection of their fauna for the British Museum (Natural History).

We learn from *Science* that President McKinley has appointed a Commission to determine the best route for a canal across the Isthmus of Panama or Nicaragua. The sum of 1,000,000 dollars has been appropriated for the expenses of the Commission, and a number of surveyors will accompany the party which will shortly leave for Colon.

Dr. D. G. Brinton, Professor of American Archæology and Linguistics at the University of Pennsylvania, has presented to the University his entire collection of books and manuscript relating to the aboriginal languages of North and South America, representing the work of twenty five years, and embracing about 2000 titles.

An excursion to Derbyshire, extending from August 3 to August 9, has been arranged by the Geologists' Association. The directors of the excursion are Mr. H. H. Arnold-Bemrose, Dr. Wheelton Hind, Mr. J. Shipman, and Mr. J. Barnes. A sketch of the geology of the Lower Carboniferous rocks of Derbyshire will be given by Mr. Arnold-Bemrose at a meeting of the Association on July 7.

The preliminary programme of the thirteenth International Medical Congress, to be held in Paris from August 2 to August 9, 1900, has just been issued from the central offices in the Rue de l'Ecole de Médecine. M. Lannelongue is president of the Congress, and Dr. Chauffard is the secretary-general. National Committees have been formed in each country to further the work of the Congress. The president of the Committee for Great Britain is Sir William MacCormac, Bart., K.C.V.O., and the hon. secretaries are Dr. Garrod, Dr. Keser, and Mr. D'Arcy Power.

The second trade exhibition of photographic and scientific apparatus and sundries will be held in the Portman Rooms, on April 27 to May 5 next year. Intending exhibitors should communicate with the Secretary of the Exhibition, 15 Harp Alley, Farringdon Street, E.C.

To celebrate the centenary of the granting of the charter to the Royal College of Surgeons of England in 1800, the Council propose to apply for a supplementary charter. It is proposed to obtain powers to confer the Fellowship of the College on persons of distinction who are not members. A memorial has been drawn up, suggesting to the Council that a favourable opportunity now presents itself for the satisfaction of that desire which has at various periods during the century, and especially during the last fifteen years, been expressed by a large number of the members of the College—viz. that they should be represented on the Council. It is submitted that "it would be both equitable and politic that the members should have a voice in the conduct of a Corporation of which they are, and always have been, numerically and financially the mainstay." At every annual meeting of Fellows and members (instituted in 1884) this or some similar proposal has been carried practically unanimously, and a petition in its favour was signed by nearly 5000 members and presented to the Privy Council. The Council have twice taken a poll of the Fellows on the question, but on neither occasion has an absolute majority voted against the proposal, though many were in its favour.

The *Academy* invited its readers to compose an inscription, of not more than forty words, suitable to be engraved upon the statue of Charles Darwin, just unveiled at Oxford. The best inscription was considered to be that submitted by Mr. Edwin Cardross, viz.: "Charles Darwin, the great naturalist, memorable for his demonstration of the law of evolution in organic life, achieved by scientific imagination, untiring observation, comparison, and research: also for a blameless life, characterised by the modesty, 'the angelic patience, of genius.'"

An interesting survival of the very ancient custom of watching the sun rise at the summer solstice was witnessed on Salisbury Plain on June 21. The *Westminster Gazette* states that on the night preceding the longest day (June 21) there was a large gathering of people from the neighbourhood, and also from other parts, assembled close to the historic circle of stones at Stonehenge, in order to see the sun rise over the Plain. When atmospheric conditions are favourable, those watching from the altar stone in the centre of the circle see the sun apparently poise itself for an instant upon the top of the stone known as the Friar's Heel. This sight is a rare privilege, and as it depends upon a doubtful meteorological condition—a perfectly cloudless sky at the point and time at which the sun rises above the horizon—those watching anxiously scan the sky, alas! in too many instances, to find that their night's vigil on the Plain is barren of result. The last time the phenomenon was witnessed was in 1895.

THE annual general meeting of the Jenner Institute of Preventive Medicine was held at Chelsea on June 23. The report of the Council for the year was read and adopted. The report states that during the year the work of the institute continued to make satisfactory progress. The internal fittings of the Chelsea building are now completed with the exception of the museum, and the various departments are fully equipped and at work. The meeting received with enthusiasm the reference to Lord Iveagh's gift of 250,000*l.* for the promotion of the objects for which the institute was founded. The gratifying announcement was made that Lord Lister had consented to act as chairman of the new governing body that will in future control the affairs of the institute. Dr. Macfadyen's report upon the general work of the institute during the year was read and adopted. During the year the organisation of work in the main laboratories of the institute was completed, and valuable additions made to the stock of scientific apparatus. The foundations of the new wing, which will complete the original plan of the institute, are at present in course of construction. The photographic department is fully equipped, and the necessary illustrations to scientific papers will in future be prepared in this laboratory. At no period has there been a greater body of research work in progress in the institute than at the present moment, and reference is made in the report to the more important investigations being carried on. A number of investigations by Dr. Hewlett and others have been published during the year, and a second volume of the *Transactions* of the institute is going through the press. As regards the courses of instruction, which have been well attended, the aim has been to train the advanced student, as is done in foreign laboratories, with a view to subsequent research work. A notable addition has been made to the departments of the institute by the foundation of the Hansen Laboratory for the study of the practical application of bacteriology to industrial and technical processes. Dr. G. Harris Morris has been placed in charge of this department, which is now at work. Dr. A. Harden's report deals with the work of the chemical and water laboratory during the year. Dr. G. Dean's report on the antitoxin department describes the improved methods adopted for the preparation of diphtheria anti-toxin and the researches being carried out in connection with tetanus, pneumonia, anti-streptococcic serum, &c.

AT the suggestion of Prof. E. Ray Lankester, Lieut. A. G. Froud has sent us a copy of a report, by Mr. G. T. Prior, upon some fine brown dust collected on board the P. and O. s.s. *Sumatra* during a thunderstorm in the Galita Channel, Mediterranean. The dust contained about 33 per cent. of doubly refractive grains, composed chiefly of carbonates of calcium, magnesium, and iron. After treatment with hydrochloric acid, the insoluble residue was for the most part without influence on polarised light, and consisted mainly of silicate of alumina (clay), with a little organic matter; only a few angular grains of quartz, and one or two very strongly refractive and doubly refractive grains, probably of iron, were observed in this insoluble residue. The dust was thus of the nature of an argillaceous and calcareous sand, and may have been carried by wind from the north of Africa. In his report, Mr. Prior remarks:—"An account by C. V. John, with analysis of fine brown dust which fell in Hungary in February 1896, will be found in *Verh. Geol. Reichsanst.* (ix., 1896, pp. 259–64). This dust, like the above, was characterised by the almost total absence of quartz, and by the presence of grains of transparent amorphous clay material. It differed from the above, however, in not containing any large amount of carbonates. The similarity in chemical composition of this Hungarian dust with that of Nile mud is pointed out, and the suggestion is made that the dust may have been derived from Egypt."

DR. MOTTE, naturalist, 13 rue Royale, Lyons, informs us that the family of a deceased collector have an egg of the Great Auk (*Alca impennis*) among other ornithological objects they desire to sell.

A FEW interesting facts with regard to the kea, or sheep-eating parrot, of New Zealand are related in the July number of the *Leisure Hour* by Dr. F. Truby King. The intense curiosity of these birds is stated to be sufficient to account for the habit of eating sheep acquired by them. Dr. King thinks it is probably a mistake to suppose that the kea designedly makes at once for the kidney fat of the sheep upon which it has pounced. It eats into various parts of the body, though perhaps more often into the region of the kidney, as it is there that the kea gets the firmest stand on the back of the running sheep. This view is strengthened by the fact that the bird prefers double-fleeced sheep—that is, such as have remained a whole season unshorn, on which it obtains a firmer grip.

IN an article on the Gold Measures of Nova Scotia (Canadian Mining Inst., March), Mr. E. R. Faribault remarks that the workable deposits of free gold are confined to the metamorphic rocks of the Atlantic coast, and occupy an area of about 5000 square miles. The gold-bearing rocks are intersected by dykes and large masses of granite which have no connection with the auriferous veins. It is observed, however, that all the rich veins and the large bodies of low grade quartz, with few exceptions, follow the planes of stratification, and occur at well-defined points along the anticlinal axes of the folds. The rocks are regarded as of Lower Cambrian age.

DR. HEPITES, director of the Meteorological Institute of Roumania, has communicated to *Ciel et Terre* of March 1 an interesting summary of the climatology of the Roumanian coast of the Black Sea. Thanks to the observations persistently made by the European Commission of the Danube, there is an uninterrupted series of observations for twenty-two years at Soulina and another series of thirteen years at Constantza, made under the superintendence of the institute. The temperature of the air at both these places is nearly similar; the yearly mean at the latter place is 51°·8. The highest shade temperature was 97°·2 in July, and the lowest – 5°·3 in January. The extreme temperatures recorded in other parts of Roumania are 108° at Giurgevo in July 1896, and – 32°·1 in January 1893. The rainfall on the coast is comparatively small, the average annual amount at Constantza is 15·7 inches. It is very seldom that the rainfall in any one year exceeds 20 inches; at Soulina during the last thirty years it has twice exceeded 23 inches. Rain falls on an average on 76 days in the year, and is spread fairly equally throughout all the months; snow falls on an average during 12 days in the year.

THE thirteenth volume (for 1897) of the *Analele* of the Meteorological Institute of Roumania has recently been published. In his annual report, the director, Dr. S. C. Hepites, who is now retiring after thirty years of service to the State, gives a history of the meteorological service during the first thirteen years of its working. In 1883 there were only three meteorological, and ten pluviometric, stations in the whole country. There are now a meteorological station of the first order at Bucharest, thirty-eight of the second order, one of the third, and 327 pluviometric stations within an area of 131,400 sq. km. The annual volume, which in the present case contains nearly 800 quarto pages, bears testimony to the value of the work accomplished. Besides the usual meteorological tables, it contains an account of the new magnetic observatory at Bucharest by M. St. Murat, and nine other memoirs, among which may be mentioned those by the director on rain at Bucharest during the last thirty-two years, the rainfall of Roumania in 1897, the magnetic elements of Bucharest, and on the register of earthquakes, eleven in number, felt during the year 1897.

IN the columns of NATURE last autumn, attention was directed by several writers to the phenomenon well known amongst iron-workers that if a bar of steel or iron, heated to a red or white heat at one end, have that end suddenly plunged into cold water, the other end will appear to become hotter. Prof. E. Lagrange, writing in the *Bulletin* of the Belgian Academy (1899, No. 4), describes experiments showing that this effect is quite compatible with the ordinary laws of conduction of heat. The bar in every case is removed from the fire before the stationary point has been reached; the temperature of the unheated end is increasing at the time of removal, and as its rate of change does not vary discontinuously, it continues to increase after removal. When the hot end of the bar is suddenly cooled, Prof. Lagrange finds that the other end attains its maximum temperature sooner, and this maximum is considerably lower than when the hot end is cooled slowly. If, however, the bar is heated until the flow of heat has become steady, no further increase takes place at the other end, whether the hot end is cooled slowly or suddenly, but the unheated end begins to cool at once, and its cooling is more rapid in the second than in the first case.

WHETHER corresponding to the Zeeman effect there exists the reciprocal phenomenon of the production of a magnetic field by a circularly polarised ray has been discussed by Profs. Fitzgerald and Gray in NATURE for January 5 and February 16. Prof. Augusto Righi, writing in the *Atti dei Lincei*, viii. (1), 7, describes his own experiments on the subject. Prof. Righi used columns of vapour of hypo-azotide and of bromine, the illumination being produced by a plane polarised beam of sunlight, between which and the tube two quarter-wave laminæ of quartz oppositely turned were placed. An astatic magnetometer showed no deviation either when the sense of polarisation was reversed by interchanging the quartzes or when the light was cut off, although a magnetic field of 10^{-6} C.G.S. units produced a perceptible deviation. In another note, published in the *Rendiconto* of the Bologna Academy, Prof. Righi describes his determination of the rotatory power of chlorine in a magnetic field. The numerical measure of this effect referred to bisulphide of carbon was found to be 0·000337, and chlorine is thus intermediate between carbonic anhydride and protoxide of nitrogen, whose rotatory powers, as found by Becquerel, are 0·000302 and 0·000393 respectively.

FROM a paper published by Drs. Rabinowitsch and Kempner in the *Zeitschrift für Hygiene* on the milk of tuberculous cows, the chance of infection from the latter appears to be greater than was even supposed. Whereas it has been generally found that cow's milk only contains tubercle bacilli when the udder is affected, or when the animal is in an advanced stage of tuberculosis, the above authors have found the bacilli in milk in the very beginnings of the disease, and without any udder affection, as well as in latent cases where its existence could only be verified by the tuberculin test. The authors point out that it is not sufficient to make one examination only of the milk, and they cite an instance in which, whilst the milk gave a negative result, butter made from the milk derived from the same cow on the same day on inoculation into guinea-pigs resulted in the death of the latter from tuberculosis, whilst an examination of this cow's milk made at a later date revealed the presence of tubercle bacilli. In view of these investigations, the authors are of opinion that the milk of all cows which react to the tuberculin test ought to be regarded with suspicion, and they point out, moreover, the great value which attaches to this test in helping to obtain milk-supplies free from the contagion of tuberculosis.

IT is always with pleasure that we receive a new *Bulletin* of the Madras Government Museum, as we are sure to find therein brightly written and instructive papers on the native races of Southern India by Mr. Edgar Thurston, the superintendent of the Museum. The most important of these little memoirs in the last issue (vol. ii. No. 3) is one on the Kadirs of the Anaimalai Hills. They are a dark-skinned, curly-haired people, short in stature (average 1·577) with a broad span (1·688), deep-chested, and like many mountaineers they rarely walk with a straight leg. The head is narrow (average 72·9), the jaws do not project, and the nose is wide (average 89·8). They thus are good representatives of the ancient population of Southern India. They have one remarkable custom which appears to be unique in the Indian peninsula, and that is the chipping of all or of some of the incisor teeth of both jaws into the form of a sharp-pointed cone.

IN a note on the Dravidian head, Mr. Thurston (*loc. cit.*) states that the average cephalic index of 639 Dravidians belonging to nineteen tribes and castes is 74·1. Out of the total number measured by him only nineteen, or 3 per cent., of the indices exceeded 80, the maximum being 83·7. In a discussion on the Dravidian problem, Mr. Thurston gives only a few original observations, and has collected the opinions of a number of authors, but he does not sum up or give us his own conclusions.

THE origin of life, as developed from a mechanical foundation, forms the subject of a work by Dr. Ludwig Zehnder, of Freiburg, the first part of which has just reached us. After referring to the work of Darwin and his successors, the author tells us in his introduction that there has long been a hope that a direct transition between unorganised and organised bodies would some day be discovered, but that hitherto the gap has not been bridged. Apparently it is his intention to show how the two great groups are at present known to approach one another. The present part treats of Monads, simple cells, and Protistæ.

IN broad contrast to the foregoing may be mentioned a brief paper by M. E. Lefort, published at Lyons under the title of "Fausseté de l'Idée Evolutioniste appliquée au Système Planétaire ou aux Espèces Organiques." The general contention appears to be that every change in nature is due to direct Divine interposition.

A SHORT account of the first voyage of the Prince of Monaco's new vessel, *Princess Alice II.*, appears in the *Comptes rendus*; and a fuller description of the work in northern waters, illustrated by photographs, is published in the Paris *Bulletin du Museum d'histoire naturelle*. The expedition of last year started from Havre in June, and, after a meeting with the Emperor of Germany off the Norwegian coast, worked in Spitsbergen waters till the end of August, returning to Havre about the middle of September. Extended physical and biological observations were made both at sea and on a number of islands in high northern latitudes. The collections will be added to the museum of oceanography recently founded by the Prince at Monaco.

WE have received the first number of *Finland*, an "English journal devoted to the cause of the Finnish people."

Science of June 16 publishes a translation of a criticism of the plans for an International Catalogue of Scientific Literature, contributed to the *Zoologische Anzeiger* by Prof. J. Victor Carus.

A MEETING of the Anatomical Society of Great Britain and Ireland will be held in the Anatomical Schools, New Museums, Cambridge, on Saturday, July 8, commencing at 2 p.m.

MESSRS. J. AND A. CHURCHILL announce that they will shortly publish the following scientific works: A text-book of physics by Prof. Andrew Gray, F.R.S.; the book will be issued in three parts, the first to appear being that on dynamics and properties of matter. A work on medical electricity for the use of students and practitioners, by Dr. W. S. Hedley. A handbook on chemistry and physics, for students preparing for the first examination of the Conjoint Board, by Messrs. Corbin and Stewart.

THE additions to the Zoological Society's Gardens during the past week include a Rhesus Monkey (*Macacus rhesus*, ♀) from India, presented by Mrs. L. Smallcombe; a Macaque Monkey (*Macacus cynomolgus*) from India, presented by Mr. J. H. Johnston; a Diana Monkey (*Cercopithecus diana*, ♀) from West Africa, presented by Mr. T. N. Loy; a —— Deer (*Cariacus*, sp. inc. ♂) from Tobago, presented by Captain J. Leslie Burr, R.N.; a Stone Curlew (*Aedicnemus scolopax*), European, presented by Mr. D. T. Campbell; six Cormorants (*Phalacrocorax carbo*, juv.) from Scotland, presented by Mr. Percy Leigh Pemberton; a Yellow-crowned Penguin (*Eudyptes antipodum*), a Thick-billed Penguin (*Eudyptes pachyrhynchus*) from New Zealand, a Rock-hopper Penguin (*Eudyptes chrysocome*) from the Falkland Islands; two Elephantine Tortoises (*Testudo elephantina*) from the Aldabra Islands, a Reticulated Python (*Python reticulatus*) from the East Indies, deposited; a Red Deer (*Cervus elaphus*, ♂), born in the Gardens; two Coscoroba Swans (*Coscoroba candida*) from Antarctic America, purchased.

OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES IN JULY:—

July 2.	9h. 16m. to 11h. 14m. Transit of Jupiter's Sat. III.
3.	12h. 40m. to 13h. 30m. Occultation of the star D.M. + 21°, 539 (mag. 5·7) by the moon.
3.	14h. 57m. to 15h. 43m. Occultation of the star 32 Tauri (mag. 5·7) by the moon.
5.	15h. Conjunction of Venus and the moon (♀ 1° 0′ south).
6.	10h. Conjunction of Venus and Neptune (♀ 0° 46′ north).
13.	9h. 51m. Minimum of Algol (β Persei).
15.	Venus. Illuminated portion of disc 0·955, Mars 0·931.
19.	8h. 6m. to 9h. 17m. Occultation of B.A.C. 5709 (mag. 6·3) by the moon.
19.	8h. 9m. to 9h. 24m. Occultation of 26 Ophiuchi (mag. 6·1) by the moon.
19.	14h. Conjunction of Saturn and the moon (♄ 2° 26′ north).
20.	7h. 39m. to 8h. 41m. Occultation of 7 Sagittarii (mag. 5·4) by the moon.
20.	8h. 4m. to 9h. 15m. Occultation of 9 Sagittarii (mag. 5·7) by the moon.
21.	23h. Mercury at greatest elongation (26° 59′ east).
24.	9h. 26m. Jupiter's Sat. IV. in conjunction with north pole of planet.
28.	Tempel's comet (1873 II.) in perihelion.

TEMPEL'S COMET 1899 *c* (1873 II.)—The following ephemeris is contributed to the *Astr. Nach.* (Bd. 149, No. 3574), by M. L. Schulhof.

Ephemeris for 12*h*. *Paris Mean Time*.

1899.		R.A.		Decl.		Br.
		h. m. s.		° ′ ″		
June 29	...	20 13 33·4	...	− 8 35 52	...	2·525
30	...	14 51·3	...	8 56 1		
July 1	...	16 8·8	...	9 16 56		
2	...	17 25·9	...	9 38 37		
3	...	18 42·5	...	10 1 5	...	2·770
4	...	19 58·6	...	10 24 18		
5	...	21 14·4	...	10 48 17		
6	...	20 22 29·7	...	−11 13 0		

FIFTH SATELLITE OF JUPITER.—In *Bulletin* No. 10 of the Yerkes Observatory (*Astrophysical Journal*, vol. ix., p. 358), Prof. G. E. Hale gives the measures of Jupiter's fifth satellite which have recently been made by Prof. E. E. Barnard with the 40-inch refractor. The observations were made on five nights during March and April 1898, and on four nights during April and May 1899. The constants determined are as follows:—

Times of east elongation, G.M.T.	d.	h.	m.				East elongation distance.
1898 March	2	18	57·80	...	...	...	″
1898 March	6	18	36·11	...	...	...	48·14
1898 April	5		...	...	...	...	48·12
1899 April	25	19	5·26	...	...	...	48·34
1899 May	1	18	32·72	...	...	...	48·29

The different values of the elongation distance are due to the revolution of the line of apsides, which, as Tisserand showed, takes place in a period of five months. The consistency of the measures with the instrument are shown by the plotted curve of the 131 observations of May 1, none of which depart more than 0″·4 of arc from the mean.

The great number of revolutions made by the satellite since its discovery in 1892 render possible an accurate calculation of its period. Using the elongations of September 10, 1892, March 6, 1898, April 25, 1899, and May 1, 1899, the resulting periodic time is found to be

11h. 57m. 22·647s.

OXFORD UNIVERSITY OBSERVATORY.—The twenty-fourth annual report of the Savilian Professor contains an account of the work accomplished from June 1, 1898, to May 31, 1899, and a survey of the condition of the instrumental equipment. The large dome, erected in 1875, has become so defective that plans for a new one have been prepared, the estimated cost being 440*l*. In consequence of disadvantages resulting from the unprotected state of the observatory, the need of a residence is strongly urged. During the year the observatory has been greatly enriched by the acquisition of the library of the late Mr. George Knott. Among the numerous presents received, special mention is made of a long series of early nautical almanacs, extending from 1767 to 1843, kindly given by Mr. Robert Gordon.

The De la Rue astrographic telescope is in good order, 258 plates for the catalogue having been taken during the year. The De la Rue reflector and the Barclay transit circle are both in good order. With the latter an unknown, variable change of collimation error has been traced to the looseness of the object-glass in its cell, this being finally eliminated by cotton wool packing.

No time has been found to proceed further with the photographic transit circle. The four micrometers for measuring the catalogue plates are in general use, one being in charge of Mr. T. J. Moore, of Doncaster, who has measured 61,186 stars with it.

The staple work of the observatory staff has been the measurement and reduction of the plates for the astrographic catalogue, and about half of this is now done, 586 plates out of the 1180 allotted to the observatory having been measured, and 525 completely reduced. In the region of the Milky Way the times of exposure for the plates have been reduced to 3 min., 1 min. and 20 secs., the number of stars even with the smaller exposure being still over 300.

Considerable interest attaches to the investigation undertaken to determine the possible distortion present in a large photographic doublet. Positives from plates taken with the 24-inch Bruce doublet at Arequipa have been lent by Prof. Pickering,